

## ABSTRACT

A variable microarray and methods of detecting the presence of one or more analytes in a sample are provided. In a preferred embodiment, the microarray includes a plurality of microspheres disposed on a substrate in any random order. The microspheres are individually identifiable by a color-based address. Analyte binding entities on the microspheres bind analytes if present in a test sample. An indication of binding, such as fluorescence, can be correlated with the appropriate color-based address to determine the identity of the analyte-binding entity and analyte giving rise to the indication of binding.